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## Zone Control Unit

Operating Instructions

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# Zone Control Unit

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**Contents** **Page**


**1. Instructions For Safe Use** **2**
- 1.1. Introduction 2
- 1.2. Explanation Of Symbols 2
- 1.3. General Safety Instructions 3
  - Intended Use 3
  - Operating Conditions 3
  - Transport and Storage 3
  - Acceptance 3
  - Operating 3
  - Disposal 3

**2. Types** **4**
- 2.1. Semi-embedded Type 4
- 2.2. External Mounted Type 5

**3. Components** **5**
- 3.1. Vacuum Control Group 5
- 3.2. Compressed Gas Control Group 5

**4. Operating The Unit** **6**
- 4.1. Vacuum Control Group 6
- 4.2. Compressed Gas Control Group 6
- 4.3. Compressed Gas Emergency Service Supply 6

**5. Cleaning and Disinfection** **7**

**6. Tests and Servicing** **7**
  - Gas Tests 7
  - Electrical Tests 7

**7. Trouble-Shooting** **8**

**8. Technical Data** **9**

**9. Typical Pressure Switch and Vacuum Switch Wiring Diagram** **10**

**10. Spare Parts List** **11**

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# Zone Control Unit

## 1. Instructions For Safe Use

### 1.1. Introduction

Please note that certain work may only be carried out by staff with the appropriate qualifications:

- The zone control unit should only be operated by trained medical staff
- The zone control unit should be cleaned only by trained cleaning staff

- Prior to the use of the zone control unit, please read these operating instructions carefully. In this way, you will be able to take full advantage of the zone control unit's features and protect yourself and others from damage.
- The zone control unit is only intended for use as described in these operating instructions and should only be used in this way. Use, any other than described here, could pose a danger to the product and other property of the operator.
- In case of problems that cannot be adequately dealt with by these instructions for use, please contact your supplier, for your own safety.

These operating instructions refer to the zone control units in general.

The zone control units may be either semi-embedded or surface mounted types, with different dimensions and configurations according to the requirements of the customer and the conditions of the site of installation.

These operating instructions should be kept, for future reference to safety instructions and important information close to zone control units.

- The zone control unit is state of the art technology and is safe in operation. However, it may pose as a source for danger; especially if it is used by untrained and inadequately trained staff or improperly and not in accordance with its intended use.
- For reasons of safety, no alterations or adaptations should be made on zone control unit without the agreement of Nassetti.
- The staff should be instructed, based on these instructions, in work with relevance to safety and the action, operation and care of the unit.
- The contents of the operating instructions may be changed at any time without notice. For translations into foreign languages, the English version of these instructions is definitive.

**Versions:**
The models may be equipped with other manufacturers end appliances. For information on their operation, please refer to the operating instructions of these manufacturers.

### 1.2. Explanation Of Symbols

The safety symbols listed below have been used in these instructions, in order to draw attention to operating faults critical to safety.

**WARNING!**
***If this is not complied with, severe or even fatal injury is possible.***

**CAUTION!**
***If this is not complied with, slight or moderate injury or material-system damage is possible.***

**NOTE!**
***Gives tips for use and useful information.***

### 1.3. General Safety Instruction

Please also comply with the special safety instructions in the following sections.

**Intended Use:**

- The zone control unit is individually equipped with special equipment; depending on the version and types, the unit is for:
    - Zone control units are used in single stage medical gas systems to control the output pressure of the supply source to supply medical equipment via connections to terminal units or to be applied directly to the patient; and when necessary, to isolate between the supply source and the utilization points
    - To supply the necessary pressure level information via the integrated pressure switch and vacuum switch units to the audible-visible alarm unit.

- The zone control unit is suitable for continuous use.

***The zone control unit is for the use for oxygen, compressed air, nitrous oxide, carbon dioxide and nitrous gases. Not be used for other gases.***

**Operating Conditions:**

- Ambient temperature: -20 / +50°C
- Relative humidity: %30-75
- Atmospheric pressure: 700-1060hPa
- The unit is not suitable for operation in areas under the danger of any explosions.

**Transport and Storage:**

- Following that period, the values of operating conditions apply. Store only in closed or roofed rooms. Do not subject the unit to severe vibration.
- Ambient temperature: -20 / +50°C
- Relative Humidity: %30-75
- Atmospheric pressure: 700-1060hPa

**Acceptance:**

The installer and / or customer, should perform the medical gas system installations according to EN 737-3 standard, and test according to the same standard.

**Operating:**

***The zone control unit input pressure should be 4 or 8bar according to the gas type. The system isolation valve of the zone control unit is not to be used for pressure regulation purposes.***

**Disposal:**

Legal specifications may contain special regulations for the disposal of this product. To avoid damage to the environment and to people, please contact us when you finally take the product out of service with the intention of disposing of it.

## 2. Types

In the general design of the unit, EN 737-1, EN 737-3, EN ISO 11197 standards, aesthetic satisfaction and ease of use and servicing have been used as the primary criteria; and in order to use in locations where more than one medical gas is needed, types consisting of zone control group in required quantity are developed.

The zone control units, depending on request, may be surface or flush-mounting and are installed in electrostatic powder coated (RAL 9016) 1,5mm thick DKP steel case panel. The panel is equipped with a locked cover to allow only for the interventions by the technical staff. However, the transparent panels of the cover, on which the gas name is inscribed, allow easy reading of the manometer and vacuummeter values without having to open the cover, in compliance with 837-1 standard. Units are installed in the panel so that adjustments can be made easily. All parts making up the system are connected to each other and to the copper pipe network by easily dismounting connections. A breakable locking system is added to the cover system in order to intervene at the isolation valves in emergency conditions.

In the unit, there are pressure switches and vacuum switch transmitting the low and high pressure level in compressed gas and low vacuum level in vacuum to audible-visible alarm units.

First class materials, in compliance with relevant standards, are used in the production of the units and the products are offered to service using advanced installation techniques.

The zone control units manufactured in different types have the following features:

For Oxygen, Nitrous Oxide, 4bar Compressed Air, 8bar Compressed Air, Nitrogen and Carbon Dioxide equipped with:

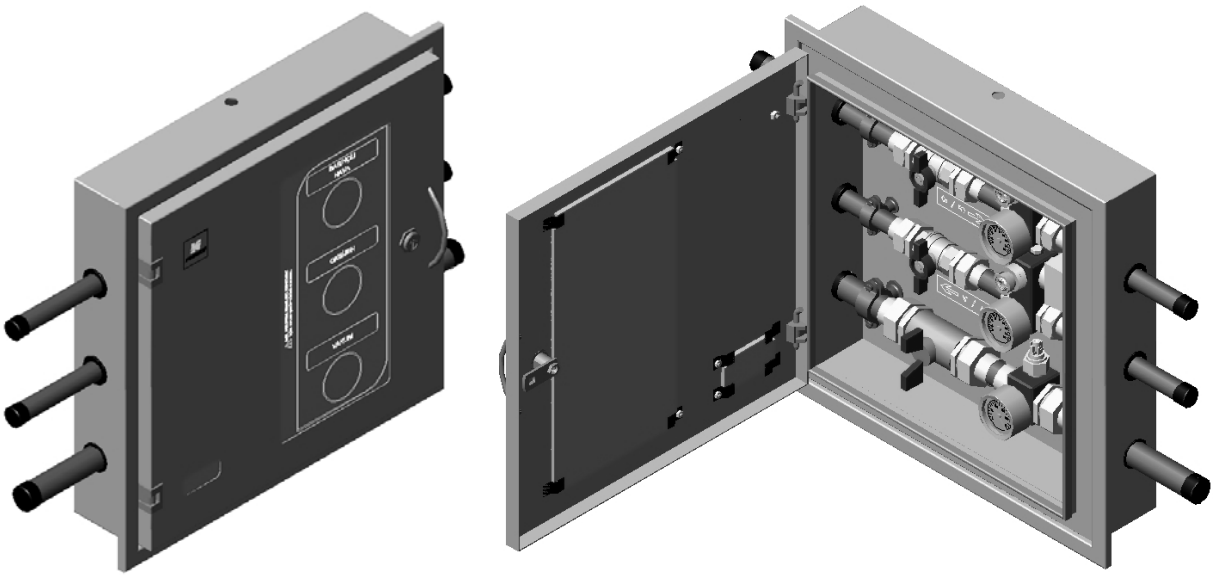
- 1 ea. Manometer displaying system pressure,
- 1 ea. System isolation valve,
- 1 ea Gas specific emergency service supply outlet inlet downstream of the system isolation valve,
- 1 ea. Low-high pressure switch

For vacuum:

- 1 ea. Vacuummeter displaying vacuum value,
- 1 ea. System isolation valve,
- 1 ea. Vacuum switch.

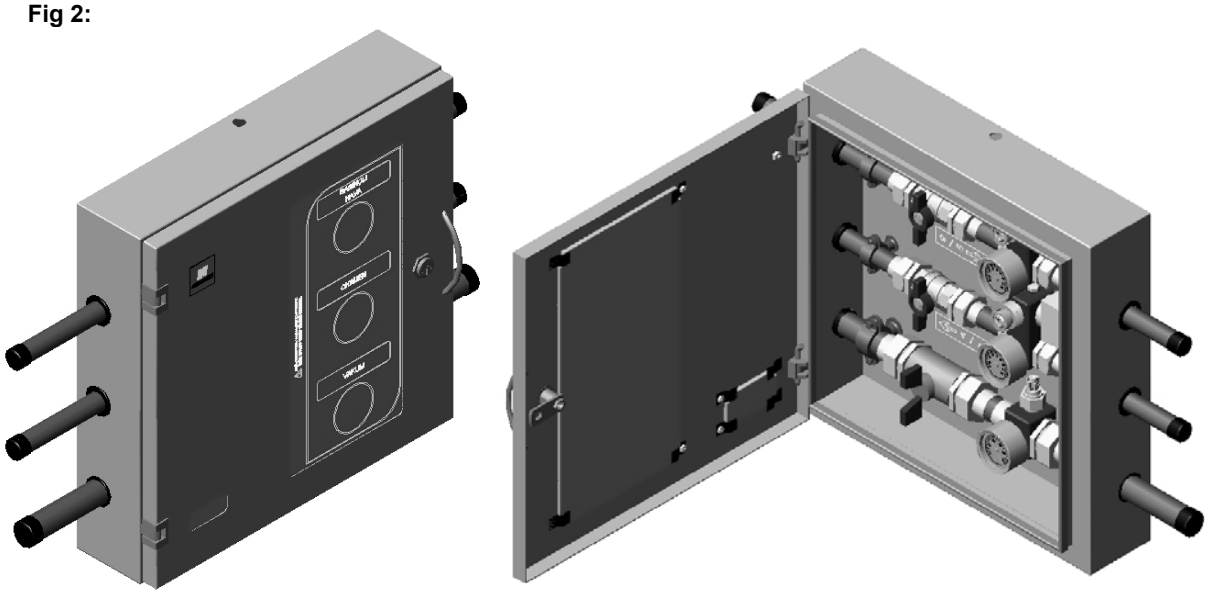
### 2.1. Semi-Embedded Type

**Fig 1:**



### 2.2. Surface Mounted Type

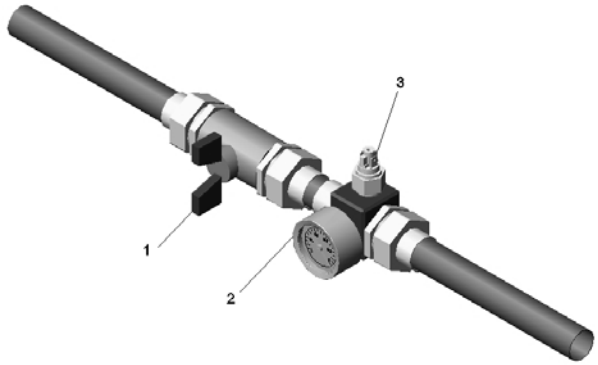
**Fig 2:**



## 3. Components

### 3.1. Vacuum Control Group

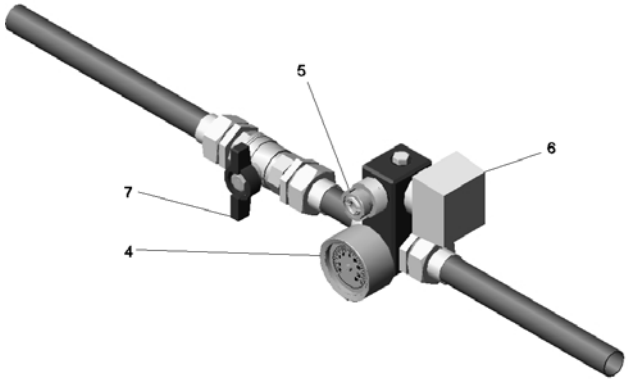
**Fig 3:**




1-System isolation valve
2-Vacuummeter
3-Vacuum switch

### 3.2. Compressed Gas Control Group

**Fig 4:**




4-Manometer
5-Gas specific emergency service supply outlet
6-Pressure switch
7-System isolation valve

## 4. Operating The Unit

### 4.1. Vacuum Control Group

- Open the system isolation valve (1),
- Read the pressure value from input vacuummeter with 0-760mmHg display (2); this value should be minimum 450mmHg.

### 4.2. Compressed Gas Control Group

- Open the system isolation valve (7),
- Read the pressure value from input manometer with 0-16bar display (4); this value should be between 8 and 10bar.

### 4.3. Compressed Gas Emergency Service Supply

- Find the reserve supply system which will supply suitable output pressure and capacity for the gas unit to be serviced.
- Connect the reserve supply unit connection to the zone control unit's emergency service supply outlet (5); secure the connection with the locking system.
- Close the system isolation valve (7).
- Open the output valve of reserve supply system. Control the flow from an outlet.

***Medical gas outlets are according to EN 737-1 and special to gas to avoid misidentification.***

***Before performing service-repair on any material in the unit, department medical authorized staff should be acknowledged.***

***The pressure switch and vacuum switch supplied in the unit are factory adjusted. No intervention should be made to these adjustments***

***For 4bar output zone control units, the low pressure alarm set value is 3,6bar, high pressure alarm set value is 5,7bar, for 8bar output zone control units, low pressure alarm set value is 6,4bar; high pressure alarm set value is 9,7bar.***

## 5. Cleaning and Disinfection

***To avoid any damage to the zone control units, do not use any scouring agent, or any cleaning agent, which includes alkaline, acidic or contains alcohol (e. g. ethanol, propanol, etc.) or aldehyde. Neutral soap is recommended for cleaning***

For cleaning, use a soft, lint-free cloth.

## 6. Tests and Servicing

***The calibration of the manometer, vacuumeter, pressure switch and vacuum switch can be defected and display false values or result with a wrong alarm. Manometer and vacuummeters can have leakage.***

***The unit or its components should not be contacted to oil; fire or explosion danger can be occurred. Only original spare parts should be used in services. No identification label should be removed.***

***The pressure switch and vacuum switch in the unit should be connected to audible-visible alarm system.***

***The zone control unit's safety, liability and performance can be protected as Nassetti original parts or parts determined as suitable by Nassetti used in service, repair and renovation activities or as accessories.***

**Gas Tests:**

- The gas connections must be checked once a year:
  - Connections and marking as described in EN 737-1 and EN 737-3,

**Electrical Tests:**

- Pressure switch and vacuum pressure low voltage electrical connections and leads should be tested every year in accordance with EN 60601-1:1990 + A1:1993 + A2:1995 + A13:1996).

***Nassetti shall not be liable for damages and injuries occurring as a result of inspections, repairs, alterations or any work carried out by unauthorized service personnel.***

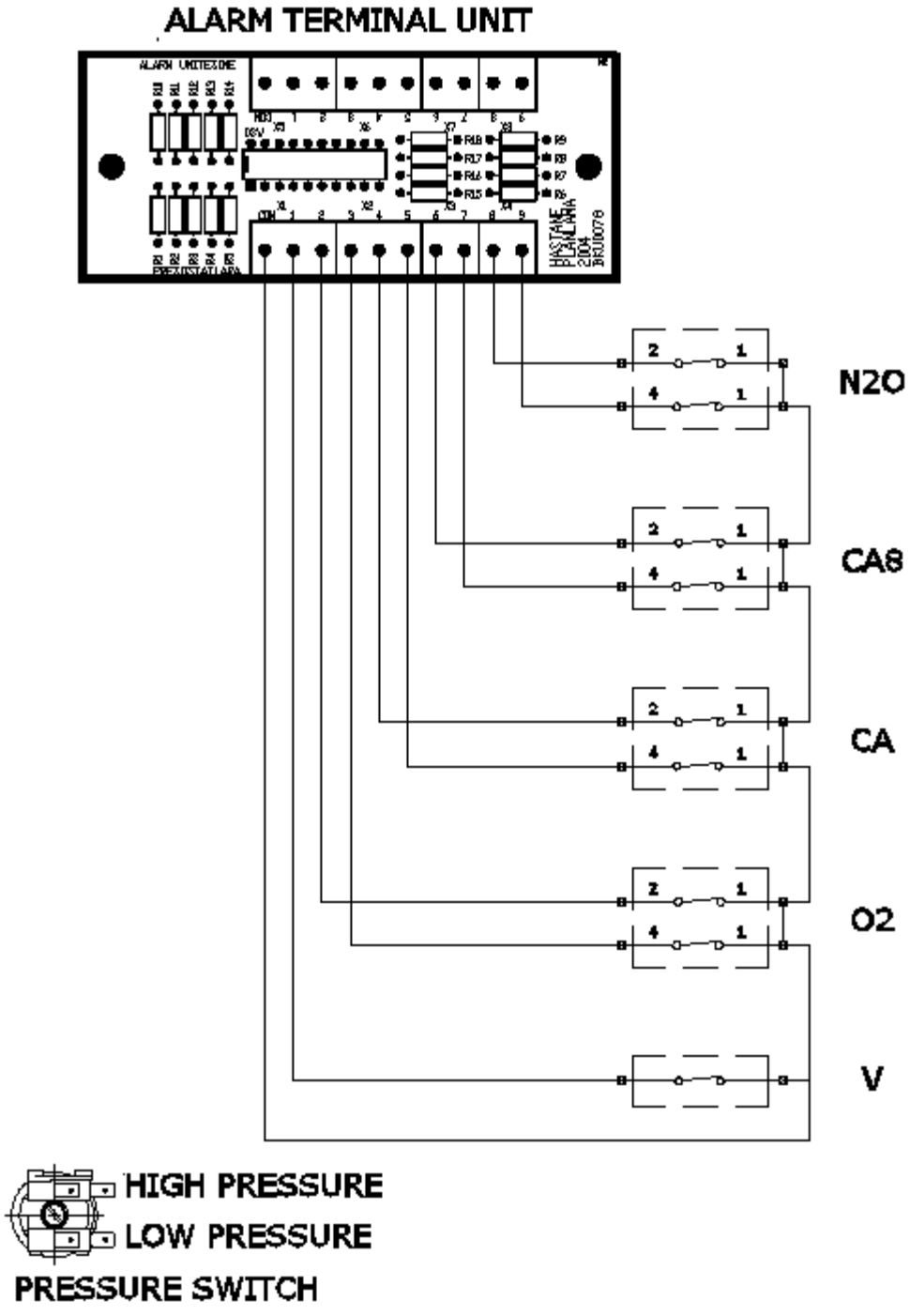
## 7. Trouble Shooting

| Problem | Possible Cause | Solution |
|---|---|---|
| After the unit (downstream), no gas on outlet and/or low pressure, audible-visible alarm is active | • Unit isolation valve is closed or blocked<br>• Problem in supply source<br>• Leakage downstream | • Inform service department |
| After the unit (downstream), normal gas pressure but audible-visible alarm is active. | • Problem in alarm connection installation<br>• Defected pressure switch<br>• Defected audible-visible alarm unit | • Inform service department |
| After the unit (downstream), high or low pressure on outlet, but audible-visible alarm is not activated | • Problem in alarm connection installation<br>• Defected pressure switch<br>• Defected audible-visible alarm unit | • Inform service department |

## 8. Technical Data

| | |
|---|---|
| **Zone Control Unit Structural Features** | |
| Chemical nickel plated brass monoblock body | |
| Oil free to be suitable to oxygen | |
| With output manometer | |
| Control with input isolation valve | |
| Gas special emergency service supply outlet at output | |
| Gas Types: Oxygen, Compressed Air, Nitrous Oxide, Nitrous, Carbon Dioxide | |
| **Vacuum Control Structural Features** | |
| Chemical nickel plated brass monoblock body. Equipped with isolation valve, vacuum switch and vacuummeter | |
| **Zone Control Unit Performance, Function and Flow Characteristics** | |
| Max. Pressure Proof | 30bar |
| Max. Input and outlet Pressure | 10bar |
| **Classification As In EC Guidelines Medical Products Of 14th June 1993: 93/42/EEC, Annex II** | |
| Protection Class: 1 | |
| Type Of Protection: Covered Construction (IP 21)<br>Ordinary Appliance (Closed Appliance Without Protection Against Water Penetration) | |
| The zone control unit is not intended for use in regions endangered by explosion | |
| The zone control unit is designed for continuous operation | |
| Council Guidelines: Class IIb | |
| **Basic Regulations** | |
| EN 737-1:1998, EN 737-3:1998, EN 837-1:1996 | |
| EN 60601-1:1990 + A1:1993 + A2:1995 + A13:1996 | |
| EN ISO 11197:2004 | |

## 9. Typical Pressure Switch and Vacuum Switch Wiring Diagram



## 10. Spare Parts List

| Code | Description |
|---|---|
| MGS.F0207 | Pressure Switch-Stationary Set, 3,6-5,7bar, G1/8”M |
| MGS.F0208 | Pressure Switch-Stationary Set, 6,4-9,7bar, G1/8”M M |
| MGS.F0222 | Vacuum Switch-G1/8”M, NO |

# BKUN

## Zone Control Unit

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